COU

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATION

TO:

Joe Hamblin

FROM:

Jerry Hintze

DATE:

February 27, 1990

SUBJECT:

Engineering Dust Collector Study

FILE:

01.12.09, 43.1202

We are currently studying the control and operation of all coal handling dust collectors. Plant cleanliness and maintenance problems mandate a thorough examination of the entire dust collection process. Our study will involve control logic examination, balancing air flow in all ducts, and an attempt to reduce persistent maintenance problems.

Our preliminary examination of coal handling dust collector MODICON programs, and discussions with coal handling I&C techs, has revealed control logic discrepancies between dust collectors. We will examine all dust collector control programs and devise a control scheme that can be implemented in all dust collectors. Bringing uniformity to each dust collector program will reduce confusion regarding dust collector operation and ease troubleshooting.

We will investigate the cleaning cycle timing and operation. Instruction Manual recommendations will be considered but may be modified, because certain OEM recommendations are based upon empirical data and not specific to IGS operating conditions. A degree of testing and monitoring will be performed to optimize the cleaning process.

We will also measure air flows in all ducts of each dust collector and make appropriate blast gate adjustments to bring main and branch duct air flows within original B&V specifications. This will ensure predetermined suction levels at each drop point and reveal any air flow problems reducing cleaning effectiveness.

Persistent maintenance problems with each dust collector will be surveyed and remedies suggested. Appropriate control logic changes will first be used to reduce maintenance problems. Total suspended particle density is peculiar to each dust collector, which in turn, warrants the use of unique delay times between selected equipment startup and shutdown in each dust collector. If equipment problems persist, then other options will be considered.

We will perform this study in close conjunction with your department, Operations, and I&C, so all options and considerations are examined and resolved.

Please direct questions and comments to Mike Nuttall, 6474, or Cecil James, 6438.

CDJ:tzt

cc: Bob Davis
Dennis Killian
Mike Nuttall
Joe Young

Dennis

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATIO

DATE:

March 27, 1989

TO:

Neil Clay

FROM:

Michael Mooney

SUBJECT:

Coal Dust Sampling Study

FILE:

974

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MAR 30 1989

MDA ____

Attached is the study that measured fugitive coal dust in the Coal Handling Areas, which consisted of over 85 samples. It indicates that a few problems do exist in relation to the employee health picture at the IPF.

The rule of thumb, generally used to measure coal dust, is that if coal dust is visible in the air, the supervisor should require the use of respiratory protection by the employees. Based on this study, and other known factors, the rule would expose employees beyond the threshold limit values (TLV) as set by the American Conference of Governmental Industrial Hygienists and OSHA.

In order to simplify the enforcement of adequate respiratory protection for IPSC employees, I have outlined the following recommendations:

- 1. Reinforce Management's philosophy to protect IPSC employees from adverse industrial exposure:
 - a. first, through engineering means,
 - b. second, through personal protective equipment,
 - c. and third, through ongoing monitoring of work environments to help document coal dust exposures.
- 2. Require respiratory protection (dust masks) to be worn in the Coal Handling Areas that have continually measured higher than the permissible TLV when coal is being transferred. This study indicates that most Coal Handling Areas would fall under this category. The recommendation that respiratory protection be worn when working around coal that is being transferred would be merited.
- 3. Encourage the use of dust masks in all Coal Handling Areas by making them available in all elevators or first level stairways.

NOTE: This increased emphasis on the use of respirators will require stronger enforcement of the beard policy in order to prevent code violations.

Page 2

4. Continue to decrease fugitive dust through engineering means by maintaining and improving dust suppression equipment designed for this purpose. When dust suppression equipment is in service and functioning sampling should be done to verify effectiveness. When sampling data indicates levels below the TLV then the specific area could be classified as clean and respirators are not needed.

This type of industrial hygiene work is beneficial both from the short and long term point of view. It shows that the fugitive coal dust problem at the IPF is minor. It also shows that the current practices are not adequate to protect IPSC's employees from potential long term effects of coal dust exposure.

Continued support from Staff will help assure compliance and improve the quality of the work environment in the Coal Handling Areas.

MRM: acs

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATION

TO: Michael Mooney

Page 1 of 2

FROM:

D. L. Perry

DATE:

February 10, 1989

SUBJECT:

Coal Dust Sampling Study

FILE:

The air in the coal handling area was analyzed to determine the level of air contaminants that were present and to evaluate the effectiveness of the engineering controls.

Accurate readings and records determined the extent of employees' exposure to the dust contaminant. This sampling will enable us to determine whethe or not IPSC is in compliance with OSHA requirements, state regulations, ar threshold limit values.

The areas which were sampled for coal dust exposure were: Coal car unloading, transfer 1, transfer 2, transfer 3, transfer 4, crusher buildin and stacker reclaimers #7. The sampling consisted of gravimetrical pumpir airborne coal dust through a cyclone collector onto a pre-weighted dust filter. The method used was Gravimetric Sampling - NIOSH Method 7500.

The sampling was conducted on each level of the buildings, using 2-3 dust sampling pumps in various locations. These pumps were set for approximately 2-4 hours and sampling times were randomly chosen.

Sampling was conducted from January 1988 through August 1988 with approximately 85 samples being taken and analyzed. The pre-weighted filters were then sent into a certified lab for analysis. Filters were analyzed for: Respirable coal dust, quartz, and cristobolite levels. The threshold limit values for respirable coal dust is 2mg/m, quartz is .1mg/m and cristobolite is .05mg/m.

	$\frac{\text{Coal Dust}}{\text{TLV 2mg/m}}3$	$\frac{\text{Quartz}}{\text{TLV} \cdot 1 \text{mg/m}} \frac{3}{2}$	$\frac{\text{Crist.}}{\text{TLV.0}} \frac{\text{Smg/m}}{3}$
Permissible Level			
Coal Car Unloading	$>2.01 \frac{mg}{m}^3$	>.25 <u>mg/m</u> 3	$>.09 \frac{mg}{m}^3$
Stacker Reclaimer #7	$2.67 \frac{\text{mg/m}^3}{}$	$.7 \frac{\text{mg/m}}{3}$	$.7 \frac{mg}{m}^3$

	Coal Dust 3 TLV 2mg/m	$\frac{\text{Quartz}}{\text{TLV} \cdot \text{lmg/m}}$	Crist. TLV .05mg/m
Permissible Level			
Transfer 1 - 1st, 2nd, 4th floors	$3.73 \frac{\text{mg/m}}{3}$	$.12 \frac{\text{mg/m}}{3}$	0
Transfer 2 - 1st, 2nd floor	2.50 <u>mg/m</u> 3	$1mg/m^3$	0
Transfer 3 - 1st floor	$2.43 \frac{mg}{m}^3$	$.05 mg/m^3$	$.05 \frac{mg}{m}^3$
Transfer 4 - 1st floor	1.79mg/m^3	.07mg/m ³	.07mg/m ³

When evaluating the transfer buildings sampling has shown dust levels which are permissible to 2-1/2 times the permissible level. (1987 - 1988 Study).

Due to the high coal dust levels in coal handling areas, I would recommend that it be mandatory that all personnel wear dust respirators in these areas when coal is being unloaded or transferred. Also that dust respirators be made available in all transfer buildings, in respirator dispensers, so that employees will use them and respirators would be available at all times.

In conclusion, the respiratory system needs to be protected when individuals are being exposed to coal dust. Whether the protection be engineering controls or respirators, preferable engineering controls. The results of these studies have shown that coal dust levels are a concern. This appears to be consistent in most coal handling areas and have shown to be above permissible threshold limit values, whether in respirable dust levels, quartz levels or cristobolite levels when the equipment is running Having the dust suppression system functioning properly is the best solution. However, during many of these tests the dust suppression system was not on and/or not operating correctly. The concern with having the dust suppression system functional, is being addressed presently by the Technical Service Department.

The continual sampling of these areas are important to the health and welfare of IPSC employees. It's important to be able to know what kind of exposures IPSC employees are working in, inorder to determine the best method to provide a safe working environment for them.

DLP:ppb

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATION

DKK BP.

JLY

TO:

S. Gale Chapman

FROM:

Joe D. HamblingPA

DATE:

September 14, 1989

SUBJECT:

Dust Collector Maintenance Costs

FILE:

The attached table shows a summary of Dust Collector costs on both a lifetime and a last-year basis. Totals show the total costs accrued during the specified period. The second set of columns is an attempt to include size as a parameter in relating costs. It also indicates money spent per cubic-feet-per-minute capacity per year. The third set of columns shows the percent of total maintenance costs spent on labor. The fourth set shows the percent of labor costs attributable to PM and lubrication work orders. The last column shows the actual design capacity of the Dust Collector.

Note that maintenance costs last year were 29% above the annual average. Most of the cost (78%) is from labor charges. Of the labor, about 35% is from PM and lube work.

To aid in the identification of "bad actors" the attached plot was drawn, which relates cost per cubic-feet-per-minute per year to capacity. Equipment with points above the dashed line is here considered a bad actor, and is where the first effort to reduce costs should be expended.

By far the most trouble-prone collector is equipment number 9ASE--0, the Sludge Pug Mill Collector. Its repair cost indicator (\$/cfm-yr) is eight times higher than the dashed line. This collector is a severe service area. Forty three percent of last years' maintenance cost for this equipment was lubrication as compared to 3 to 7 percent for the other bad actors.

The other bad actors, in order of indicator severity include, 9CHF--2 Coal Car Unloading, 9CHF--6 Transfer Building #4, 9CHF--3 Reserve Reclaim, 9CHF--11 Crusher Building, 9CHF--5 Transfer Building #2, 9BMA--1A Limestone Truck Unloading. Maintenance costs for these areas rum from 65% to 80% mechanical problems, except for Limestone Unloading, which was 57% electrical problems.

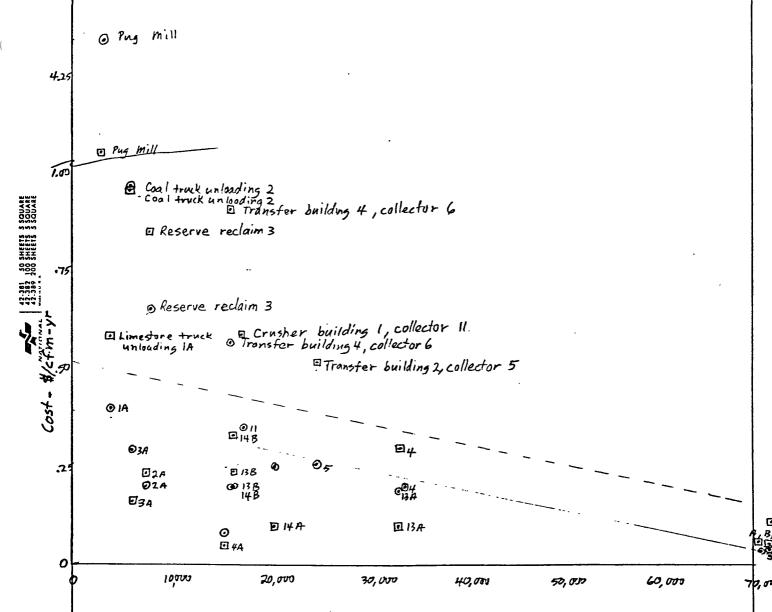
VBR/tlk

cc: Dennis Killian V

DUST COLLECTORS
COST DATA FROM START-UP TO AUGUST 1989

		TOTAL \$/cfm-yr		m-yr	%Labor % P		PM			
EQUIPMENT #	DESCRIPTION	LTD	LYR	LTD	LYR	LTD	LYR	LTD	LYR	CFM
9ASE0	Pug Mill	47275	13302	4.34	3.97	90	91	35	69	3350
9BMA1A	Limestone Tk Unid	4793	2288	0.40	0.58	35	54	58	55	3964
9BMB2A	Limestone Tk Unid	4997	1764	0.20	0.23	93	98	28	44	7780
9BMB3A	Limestone Crusher	5763	977	0.29	0.16	60	100	25	70	6070
9BMB4A	Limestone Prep	3883	1628	0.08	0.10	99	100	31	62	15778
9CHFA	Coat Car Unid	7755	3447	0.03	0.05	47	70	33	34	72156
9CHFB	Coal Car Unid	8552	4700	0.04	0.07	97	95	36	26	70696
9CHFC	Coat Car Unid	8099	2494	0.03	0.03	96	98	25	33	72923
9CHFD	Coal Car Unid	10854	9839	0.05	0.12	47	41	32	22	72446
9CHF2	Coal Trk Unid	18971	5747	0.97	0.96	70	59	21	37	6000
9CHF3	Reserve Rectalm	16820	6764	0.65	0.85	75	74	15	23	8000
9CHF4	Trans Bldg #1	21842	10232	0.20	0.30	67	51	19	25	33869
9CHF5	Trans Bidg #2	21221	13132	0.26	0.52	67	57	15	16	25313
9CHF6	Trans Bidg #4	30368	14794	0.57	0.91	72	72	11	12	16262
9CHF11	Crusher Bullding	19502	9995	0.35	0.58	64	69	18	23	17300
9CHF13A	Unit i	20798	3323	0.19	0.10	91	85	8	39	33482
9CHF13B	Unit	10840	3930	0.20	0.24	91	81	12	21	16486
2CHF14A	Unit ii	11752	2050	0.25	0.10	68	87	14	41	20872
2CHF14B	Unit 11	7507	4672	0.20	0.28	99	9	11	9	16486
Averages			115078			70	78	24	35	
Annual Avera	ge	89277								

tik



Capacity - CFM

Plant Dust Collector Lifetime Maintenance Costs 0

Year to Date Maintenance Costs 0

Dust Collector 3 has a problem that is unique to it because of the sporadic use of that equipment.

problem: Coal dust bridges over in the granulator hopper. This happens regularly, if, and when dust collector 3 is in use. suggestion: First; increase the speed of the auger for the granulator screw feeder. Second; replace the old bent and damaged auger with a new undamaged auger. Third; if the screw feeder still does not empty the hopper inside of twenty minutes; program the return screw conveyor and granulator to run continuously when dust collector 3 is being used.

INTERMOUNTAIN POWER SERVICE CORPORATION

File: 01.03.10

18.0410

August 21, 1995

Mr. Mike Edwards
State of Utah
Dept. of Environmental Quality
Division of Air Quality
P.O. Box 144820
Salt Lake City, UT. 84114-4820

Dear Mr. Edwards:

Particulate Testing for Coal Handling Equipment

Please find attached, the pretest protocol for the coal handling baghouses, as requested by your January 26, 1995, letter.

The testing contractor has been retained to start on October 2, 1995. If a pretest meeting is required, please notify us of the time and location as soon as possible.

To provide some flexibility in the testing schedule, we must have certain information before August 30, 1995. During testing for five of the sources, it is a requirement that the coal train be unloading. Train arrival times and number of trains per day are limited, due to railroad operating procedures.

In 1990, when the last tests were run, the State agreed to two runs per baghouse instead of the usual three and tests were run at night.

With this type of schedule, testing takes three to four days; otherwise it takes between 7-14 days and involves a lot of waiting for train arrivals.

Mr. Mike Edwards Page 2 August 21, 1995

Intermountain Power Service Corporation will be contacting you August 23rd to the 25th, to obtain scheduling information. After August 30, 1995, the train schedule for the month of October cannot be changed.

Please contact Mr. Dennis Killian, Superintendent of Technical Services at (801) 864-4414, Extension 6401, if you have any questions or comments.

Sincerely,

Mr. S. Gale Chapman

President & Chief Operations Officer

Attachment

Gordon Bigham w/o Attack cc:

Bob Davis w/o Attachment

Charles L. DeVore w/o Attachment

Joe Hamblin w/o Attachment



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF AIR QUALITY

Michael O. Leavitt Governor Dianne R. Nielson, Ph.D. Executive Director Russell A. Roberts Director

150 North 1950 West Salt Lake City, Utah 84114 (801) 536-4000 (801) 536-4099 Fax (801) 536-4414 T.D.D.

DAQC-078-95 January 26, 1995

S. Gale Chapman Intermountain Power Project Rt. 1, Box 864 Delta, Utah 84624

RE: Stack Test Requirement - Millard County

Dear Mr. Chapman:

Section 3.4.1, Utah Air Conservation Rules (UACR), requires emissions testing of all sources with established emission limitations at least once every five years. Some sources are required to test more frequently.

Division of Air Quality records indicate that the following source owned by your company is required to demonstrate compliance with the established emission limitations by conducting a stack test.

Source: Coal Transfer Unit #1 13A

AO Date: 10/24/89

Test Method

Limitation

Test Due

Frequency

Comments

5

.024 gr/dscf 6.9 lb/hr

10/03/95 10/03/95

5 years

Source: Railcar Loadout Unit 1A

AO Date: 10/24/89

Test Method

Limitation .024 gr/dscf Test Due 10/24/94

Frequency

Comments

15.3 lb/hr

10/02/95

5 years

Source: Railcar Loadout Unit 1B

AO Date: 10/24/89

Test Method

Limitation

Test Due

Frequency

Comments

.024 gr/dscf 15.3 lb/hr

10/02/95 10/02/95 5 years

Source: Railcar Loadout Unit 1C

AO Date: 10/24/89

Test Method 5

Limitation .024 gr/dscf

15.3 lb/hr

Test Due 10/01/95 10/01/95

Frequency 5 years

Comments



Source: Railcar Loadout Unit 1D AO Date: 10/24/89

Test Method Limitation Test Due Frequency Comments 5 .024 gr/dscf 10/01/95 5 years

15.3 lb/hr 10/01/95

Source: Transfer Bldg. #1 Baghouse #4 AO Date: 10/24/89

Test Method Limitation Test Due Frequency Comments

5 .024 gr/dscf 10/03/95 5 years 7.1 lb/hr 10/03/95

Should this letter indicate that your source is OVERDUE for the required test, you must contact the Executive Secretary, Utah Air Quality Board immediately to make arrangements to accomplish the required compliance

Please be reminded that Section 3.4.2, UACR requires at least 30 days notice prior to conducting any emission testing. You may contact Mike Edwards at (801) 536-4406 to make arrangements for testing, or to answer any questions you may have in this matter. A list of testing companies that have performed tests in Utah is available upon request.

Sincerely,

demonstration.

Russell A. Roberts, Executive Secretary

Utah Air Quality Board

RAR:SW:ts

cc: Central Utah Public Health Department

EPA Region VIII, Mike Owens

